

WE CLAIM:

1. A diploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype that contains one to six additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci his3, trp1, and ura3 per haploid genome of said cell and said cell does not contain any expressed bacterial sequence.

2. The yeast cell of Claim 1, wherein one additional copy of the INO1 gene is inserted into each of the his3, trp1, and ura3 target gene mutation loci per haploid genome of said cell.

3. A prototrophic diploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype that contains one to fourteen additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted at any or all of fourteen target gene mutation loci per diploid genome.

4. The yeast cell of Claim 3 wherein one additional copy of said INO1 gene is inserted at any of said target gene mutation loci per diploid genome of said cell.

5. The yeast cell of Claim 3, wherein said cell does not contain any expressed bacterial sequence.

6. A diploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains one to fourteen additional integrated functional copies of the INO1 gene,

wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome and said cell does not contain any expressed bacterial sequence.

5           7. The yeast cell of Claim 6, wherein one additional copy of said INO1 gene is inserted at any of said target gene mutation loci per haploid genome of said cell.

10           8. A diploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains one to twelve additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, and trp1 per haploid.

15           9. A diploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains five to fourteen additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome.

20           10. A haploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains one to seven additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1,  
25           and ura3 per haploid genome and said cell does not contain any expressed bacterial sequence.

11. The yeast cell of Claim 10, wherein said cell is prototrophic.

12. The yeast cell of Claim 10, wherein one additional copy of said INO1 gene is inserted at any of said target gene mutation loci per haploid genome of said cell.

13. The yeast cell of Claim 12, wherein said cell is prototrophic.

14. A haploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains one to six additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, and trp1 per haploid genome.

15. The yeast cell of Claim 14, wherein said cell is prototrophic.

16. A haploid yeast cell of the genus Saccharomyces with an Opi<sup>-</sup> phenotype and which contains three to seven additional integrated functional copies of the INO1 gene, wherein said additional gene copies are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome.

17. The yeast cell of Claim 16, wherein said cell is prototrophic.

18. A diploid yeast cell of the genus Saccharomyces that contains one to fourteen additional integrated functional

copies of the INO1 gene, wherein said cell does not contain any expressed bacterial sequence.

19. The yeast cell of Claim 18, wherein said cell is prototrophic.

5           20. A prototrophic diploid yeast cell of the genus Saccharomyces that contains one to fourteen additional integrated functional copies of the INO1 gene.

10           21. A diploid yeast cell of the genus Saccharomyces that contains five to fourteen additional integrated functional copies of the INO1 gene.

15           22. A diploid yeast cell containing one to fourteen additional integrated functional copies of a non-lethal gene of interest inserted into any or all of fourteen target gene mutation loci per diploid genome, and said cell does not contain any expressed bacterial sequence.

23. The yeast cell of Claim 22, wherein said cell is of the genus Saccharomyces.

20           24. The yeast cell of Claim 23 wherein said genes of interest are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome.

25. The yeast cell of Claim 24, wherein one additional copy of said gene of interest is inserted at any of said target gene mutation loci per haploid genome of said cell.

26. The yeast cell of Claim 22, wherein said cell is prototrophic.

27. A prototrophic diploid yeast cell of the genus Saccharomyces containing one to fourteen additional integrated functional copies of a non-lethal gene of interest inserted into any or all of fourteen different target gene mutation loci per diploid genome.

28. The yeast cell of Claim 27 wherein said genes of interest are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome.

29. The yeast cell of Claim 28, wherein one additional copy of said gene of interest is inserted at any of said target gene mutation loci per haploid genome of said cell.

30. A haploid yeast cell containing at least one additional integrated functional copy of a non-lethal gene of interest inserted into any target gene mutation loci per haploid genome and said cell does not contain any expressed bacterial sequence.

31. The yeast cell of Claim 30, wherein said cell is of the genus Saccharomyces.

32. The yeast cell of Claim 31, wherein said genes of interest are inserted into any or all of the target gene mutation loci ade2, his3, leu2, lys1, met15, trp1, and ura3 per haploid genome.

33. The yeast cell of Claim 32, wherein one additional copy of said gene of interest is inserted at any of said target gene mutation loci per haploid genome of said cell.

34. The yeast cell of Claim 30, wherein said cell is prototrophic.

35. Inositol-enriched yeast wherein said yeast does not contain any expressed bacterial sequence.

36. Inositol metabolites-enriched yeast wherein said yeast does not contain any expressed bacterial sequence.

37. Inositol phospholipids-enriched yeast wherein said yeast does not contain any expressed bacterial sequence.

38. Phospholipids-enriched yeast wherein said yeast does not contain any expressed bacterial sequence.